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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,913	11/21/2003	John M. McBean	MIT-152AUS (1118/A04)	2397
2101	7590	07/27/2006	EXAMINER	
BROMBERG & SUNSTEIN LLP 125 SUMMER STREET BOSTON, MA 02110-1618			BROWN, MICHAEL A	
			ART UNIT	PAPER NUMBER
			3764	
DATE MAILED: 07/27/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,913

Applicant(s)

MCBEAN ET AL.

Examiner

Michael Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>ALL IDS</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonutti in view of Sears '213.

Bonutti discloses in figure 10 a powered orthotic device for therapeutic movement training comprising a brace 10, having a length (fig. 10), including a mechanism (the straps 30), for attaching the brace, a sensor (col. 10, lines 17-19) that is coupled to a muscles (because the brace is coupled to a muscle), a processor (col. 10, lines 13-16), coupled to the sensor (the device is one piece, making the processor be coupled to the sensor), an actuator 22, the process causing the actuator to provide a force to the brace in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force (is intended use) that the prior art is capable of performing, , an active feedback control loop (inside of 210), that includes a means for measuring (col. 10, lines 24-28), a cable drive 166, coupled between the actuator and the brace and the actuator is hydraulic (fluid controlled).

Bountti '830 discloses in figure 10 a brace (fig. 10), having first and second straps (52, 30) a cable wheel (fig. 10, the wheel that cable 110 passes over), coupled to

the brace, a continuous cable 110 coupled to the cable wheel (fig. 10), the continuous cable is disposed around the cable wheel (fig. 10), with a groove (the opening in the wheel that the cable is inside of), the continuous cable is retained on the second strap (by fastener 116), a hinge mechanism having first and second hinge portions (70, 72), the hinge mechanism includes adjustable stops (210 limits movement, stops), a cable retainer 116, an actuator 22, a power source (fluid power) and a sensor (col. 10, lines 13- 16). However, it could be argued that sensor disclosed by Bountii doesn't detect an electromyographic signal. It could also be argued that the actuator disclosed by Bountii doesn't provide a force to the brace in a first direction having a force which is proportional to a magnitude of the sensor signal and in a second direction a spring force. Sears teaches in figures 1-3 a brace (an orthotic) comprising a sensor 20 that detects a signal, (the signal is based on a force applied to a person skin), that signal is then sent to a processor 22. The processor is connected to an actuator 21. The signal detected by the sensor is based on force applied to a person's skin (which includes muscles). The actuator provides a torque (a force) in one direction based on the signal and a return force in an opposite direction based on no signal being received. Sears, also teaches various sensors (col. 7, lines 41-55), that are used to detect pressure or force applied to the body.

Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bountii in view of Sears, along with Petrofsky.

Bountii discloses in figure 10 a powered orthotic device, substantially as claimed. However, Bountii nor Sears discloses a control means including a means for making a

low impedance measurement of output torque providing a feedback signal to an actuator and coupled to the actuator. Sears teaches in figures 1-3 a brace having a sensor and an actuator, as set forth above. Petrofsky teaches in figures 15 a computer controlled hydraulic resistance device comprising a sensing and control in a closed loop manner (co. 10, lines 10-15), a hydraulic actuator 211, a means 200 for receiving a sensor signal 2 and for scaling the sensor signal and the closed loop circuit 207, controls the amount of force (the valve 210 controls the amount of force applied to the actuator). It would have been obvious to one having ordinary skill in the art at the time that the invention as made that sensing and closed loop circuit as taught by Petrofsky could be incorporated into the orthotic device disclosed by Bountti and taught by Sears in order to use the closed loop circuit to control the amount of pressure that is applied to the actuator. Thus, making it possible to control the movement of the orthotic. Petrofsky also teaches a control means 200 that includes a means for making low impedance measurement of output torque.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims above, and further in view of Rahman.

Rahman teaches in figure 3 a powered orthotic comprising a cable drive system connected to a wheelchair (col. 1, lines 35-37). It would have been obvious to one having ordinary skill in the art at the time that the invention was made that the powered orthotic device having cable drive system disclosed by Bountti and taught by Sears could be attached to a wheelchair as taught by Rahman in order to use the powered

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orthotic to assist a person in a wheelchair. Fluid power can be used to control a wheelchair.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Brown whose telephone number is 571-272-4972. The examiner can normally be reached on 5:30 am-4:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gergory Huson can be reached on 571-272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M. Brown
July 21, 2006



**MICHAEL A. BROWN
PRIMARY EXAMINER**